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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/678,923	10/04/2000	Kenneth G, DeRoche	K-1633	7253
7590	11/19/2003		EXAMINER	
Larry R. Meenan Kennametal Inc. P. O. Box 231 Latrobe, PA 15650			TSAI, HENRY	
			ART UNIT	PAPER NUMBER
			2183	18
DATE MAILED: 11/19/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/678,923	DEROCHE ET AL.
	Examiner	Art Unit
	Henry W.H. Tsai	2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 30 September 2003.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-14 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-14 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In claims 1 and 8, the term "all effective cutting" is not well defined. Note the Declaration of Kenneth G. DeRoche, mailed 1/23/03, defines the term of "all effective cutting" as a cutting tool wherein each flute acts as an entire cutting edge. However, based on page 2, lines 3-17 in the specification, "a cutting tool wherein each flute acts as an entire cutting edge" should be defined as --**single flute** all effective cutting (or milling) --.

3. Claims 8-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 8, lines 6-9, it is not clear what is meant by "second effective axial length different from the first effective axial length to provide all effective cutting, the inserts each have a cutting edge and the cutting edges on adjacent inserts in any flute do not circumferentially overlap" because:

a) to have an all effective cutting (in each flute), the second effective axial length (of the inserts in the second flute) different from the first effective axial length (of the inserts in the first flute) is not the necessary condition. In other words, to form an all effective cutting, the difference between the effective axial lengths of the inserts in the first and second flutes is not an influence factor. Based on the Declaration of Kenneth G. DeRoche, mailed 1/23/03, the definition of the term of "all effective cutting" should consider "**each flute**" not between the flutes. Note in item no. 7 of the Declaration of Kenneth G. DeRoche, mailed 1/23/03, the term of "all effective cutting" is defined as --a cutting tool wherein each flute acts as an entire cutting edge--.

(b) "the inserts each have a cutting edge and the cutting edges on adjacent inserts in any flute do not circumferentially overlap" (in claim 8, lines 7-9) will not provide an "all effective cutting" based on the definition of "all effective cutting" described in the Declaration of Kenneth G. DeRoche, mailed 1/23/03, set forth above.

Applicant is required to review the claims and correct all language which does not comply with 35 U.S.C. § 112, second paragraph.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 6, and 7, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Tsujimura et al. (4,844,666).

Tsujimura et al. discloses the claimed invention comprising, a tool body having an outer surface thereon and a central axis therein and including at least a first (including

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24a, see Fig. 15) and second (including 24b, see Fig. 15) spiraling flute in the outer surface, each flute including a plurality of inserts (24a, 24b, see Fig. 15) secured therein to define an axial rake angle, wherein the axial rake angle of the inserts (24a, 24b, see Fig. 15) varies between flutes (e.g., changing from a_1 to a_4), and within each flute (changing from a_1 , a_2 , to a_3 for the flute having inserts 24a, see Fig. 15) to provide all effective cutting. Note as shown in Fig. 15, the combination of the cutting flutes (including flutes having 24a, 24b) provides all effective cutting.

Note Tsujimura et al. also discloses the limitations described:

in claim 2, all of the inserts (24a, 24b, see Fig. 15) on the entire tool body being identical;

in claim 6, the cutting edges on adjacent inserts (such as 24a, 24a, see Fig. 15) in any flute do not circumferentially overlap; and

in claim 7, the inserts (24a, 24b, see Fig. 15) each having a cutting edge and the cutting edges on inserts with differing axial rake angles have differing cutting edge lengths as shown in Fig. 15.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 3-5, and 8-14, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsujimura et al. in view of Dutschke et al. (5,425,603).

Tsujimura et al. discloses the claimed invention except for: the tool body including three spiraling flutes (in claim 3); and the actual lengths of adjacent inserts in any flute circumferentially overlap (in claim 8).

Dutschke et al. discloses a cutting insert comprising the tool body including three spiraling flutes (18, see Figs. 3a, 3b); the actual lengths of adjacent inserts (24, 24, see Fig. 3a) in any flute circumferentially overlap.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsujimura et al.'s insert to comprise the tool body including three spiraling flutes; and the actual lengths of adjacent inserts in

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any flute circumferentially overlap, as taught by Dutschke et al., in order to simplify the structure, and to facilitate the cutting process, such as better guiding the chip flow in different machining conditions for the Tsujimura et al.'s tool.

Note Tsujimura et al. also discloses:

As to claims 4 and 10, all of the inserts (24a, 24b) on the entire tool body being identical;

As to claim 9, the inserts (24a, 24a) in the first flute being secured at a first axial rake angle while the insert (24b, 24b) in the second flute being secured at a second axial rake angle different from the first axial rake angle as shown in Fig. 15; and

As to claim 13, the actual lengths of adjacent inserts (such as 24a, 24a, see Fig. 15) in any flute do not circumferentially overlap.

Response to Arguments

8. Applicant's arguments mailed 9/30/03 have been considered but are moot in view of the rejections set forth above.

Regarding the 35 U.S.C. §112, first and second paragraph problems, Applicant's response has not completely overcome these rejections.

Applicants argue that the term "all effective cutting" is a term that is well known in the art'. In simplistic terms, "all effective cutting" means that each flute acts as an entire cutting edge. In contrast, "half effective cutting" means that it takes two flutes to act as an entire cutting edge.

As set forth in the rejections set forth above, the term "all effective cutting" is not well defined. Note the Declaration, mailed 1/23/03, defines the term of "all effective cutting" as a cutting tool wherein each flute acts as an entire cutting edge. However, based on page 2, lines 3-17 in the specification, "a cutting tool wherein each flute acts as an entire cutting edge" should be defined as --**single flute** all effective cutting (or milling)--. Similarly, according to Col. 1, lines 38-49 of Patent No. 5,913,644 to DeRoche et al., the above should be defined as --single flute all effective milling (cutting)--. Regarding "half effective cutting", it is not mentioned in either specification or claims.

In summary, Tsujimura et al. and Dutschke et al. , as best understood, teach the claimed invention.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Henry

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Tsai whose telephone number is (703) 308-7600. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Eddie Chan, can be reached on (703) 305-9712. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **TC 2100 receptionist whose telephone number is (703) 305-3900.**

11. In order to reduce pendency and avoid potential delays, Group 2100 is encouraging FAXing of responses to Office actions directly into

the Group at fax number: 703-872-9306

This practice may be used for filing papers not requiring a fee.

It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account.

Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2100 will be promptly forward to the examiner.



Henry W. H. Tsai
PRIMARY EXAMINER

November 17, 2003